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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,908	08/11/2006	Keisuke Asaba	15722.0001	5727
27890 7590 07/01/2009 STEP TOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036				
EXAMINER PHAM, LEDA T				
ART UNIT 2834		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/556,908

**Applicant(s)**

ASABA ET AL.

**Examiner**

LEDA PHAM

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 May 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Becker (U.S. Patent No. 549,234).

Regarding claim 1, Becker teaches a DC motor having magnets as a main source for generating a magnetic flux and armature coils as a main source for generating a torque and using either thereof as a rotor, wherein the armature coil (fig 1-2) comprises an inner coil group (b1, B2, B3) formed by arranging, parallel with each other, a plurality prescribed number of hollow inner coil bodies (fig 7) of a prescribed shape wound with a conductor of a prescribed number of turns on outer peripheral side surfaces of a virtual disc or a disc-shaped core (armature L), and an outer coil group (a1, A2, A3) formed by arranging, parallel with each other, a plurality of hollow outer coil bodies (fig 7) of a prescribed shape wound with a conductor of a prescribed number of turns on portions of said outer peripheral side surfaces of the virtual disc or disc-shaped core (armature L) not covered by the inner coil group (B1, B2 ,B3), such that the inner coil group and outer coil group combined cover substantially all of the outer peripheral side surfaces of the virtual disc or disc-shaped core, the outer coil group further covering portions of while covering the inner coil group (fig 1-2, col 2 ln 1-15).

Regarding claim 2, Becker teaches the outer peripheral side surface of the inner coil group (B1, B2, B3) is made externally flush with the outer peripheral side surface of the outer coil group (A1, A2, A3), such that a curve tangential to the outer peripheral surfaces of the inner and outer coil groups forms a circle (fig 2, fig 6).

Regarding claims 3 and 4, Becker teaches each of the respective inner coil bodies (B1) and the respective outer coil bodies (A1) are formed into a hollow and roughly trapezoidal or a hollow and arrowed shape (fig 7), each of the corresponding inner coil bodies is arranged at intervals of 120 degrees (col 2 ln 1-5), and wherein each of the corresponding outer coil bodies is shifted from each of the corresponding inner coil bodies by 60 degrees (fig 2) and is arranged at intervals of 120 degrees with respect to each adjacent outer coil body (col 2 ln 10-15).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 5-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker in view of Trusock et al. (U.S. Patent No. 4,500,819).

Regarding claims 5-8, Becker teaches the armature coil portion (A, B) is made to serve as a rotor, the DC motor includes commutators (E) adaptable to the respective inner coil bodies (B) and the respective outer coil bodies (A) and two brushes (g) arranged for the respective commutators. However, Becker does not teach the interval arranging of the brush is 90 degrees. Trusock teaches an electric motor wherein the brushes (86, 88, 92, 94) arranged in an interval of 90 degrees respective to a commutator (63) to provide electricity to the motor without short circuit. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the arrangement of the brushes at an interval of 90 degrees as taught by Trusock. Doing so would supply electricity to a motor without short circuit.

Regarding claims 9-16, Becker teaches the armature coil portion (A, B) is made to serve as a rotor, the DC motor includes commutators (E) adaptable to the respective inner coil bodies (B) and the respective outer coil bodies (A) and four brushes (g) arranged for the respective commutators. However, Becker does not teach the interval arranging of the brush is 90 degrees. Trusock teaches an electric motor wherein the brushes (86, 88, 92, 94) arranged in an interval of 90 degrees respective to a commutator (63) to provide electricity to the motor without short circuit. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was

made to modify the arrangement of the brushes at an interval of 90 degrees as taught by Trusock. Doing so would supply electricity to a motor without short circuit.

6. Claims 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Becker and Trusock, further in view of Ban (JP05-227716, hereinafter Ban).

Regarding claims 17-24, the combination of Becker and Trusock teaches the claimed invention, except for the added limitation of the respective coil bodies formed by star-connecting the respective inner coil bodies and the respective outer coil bodies. Ban teaches the DC motor (fig 3-4) includes commutators adaptable to respective coil bodies (3a, 3b, 3c, 6a, 6b, and 6c) formed by star-connecting the respective inner coil bodies and the respective outer coil bodies (fig 3) to prevent a spark discharge between a commutator and a brush. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the DC motor by using the star connection as taught by Ban in Becker DC motor for preventing a spark discharge between a commutator and a brush.

#### ***Response to Amendment***

7. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEDA PHAM whose telephone number is 571-272-5806. The examiner can normally be reached on normally M-F (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen P. Leung can be reached on 571-272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/  
Supervisory Patent Examiner, Art Unit 2834

/LEDA PHAM/  
Examiner, Art Unit 2834